

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) ~~A~~ In a network environment having a server connected to a router which is configured to not forward multicast traffic, the router connected to a plurality of switches, each switch connected to a plurality of subnets and configured to forward multicast traffic, a method for automatically establishing a discovered set of subnets as an alias domain comprising the following operations performed by the server:

discovering a set of subnets in the plurality of subnets, the set of subnets having visibility of a broadcast or multicast transmission;

selecting a network element to perform the broadcast or multicast transmission, the network element being in one of the set of subnets;

sending a transmission job identifier to the network element, wherein the broadcast or multicast transmission to be performed by the network element will include said identifier and the address of said one of the set of subnets; and

receiving an indication from the network element that it is aware of an alias domain representative being in another one of the set of subnets.

2. (Canceled).

3. (Previously Presented) The method of claim 1 wherein the transmission is a multicast transmission.

4. (Original) The method of claim 1 wherein the selecting the network element comprises determining the network element to have a set of data to be transmitted for the transmission.

5. (Original) The method of claim 1 further comprising maintaining a state of the transmission for each member of each of the set of subnets.

6. (Currently Amended) A method comprising:

enumerating a set of subnets in which network elements will be targets of a multicast or broadcast job; and

establishing ~~a the~~ set of subnets as an alias domain ~~wherein each one of the set of subnets is assigned the same subnet address,~~ by a core server automatically a) sending a

discovery message to ~~the~~ a subnet representative of each one of the set of subnets, wherein the discovery message contains an identifier for the multicast or broadcast job, b) evaluating a response from ~~the~~ a first subnet representative of a first subnet, c) where the response indicates that the sender's subnet has an alias, then assigning the sender's subnet to a domain indicated by the response, and d) where the response indicates that the sender's subnet has no alias, then storing the sender's subnet address as a domain; and

~~selecting a network element in the alias domain to transmit a set of data to the domain; and~~

~~maintaining a status of transmission of said set of data, wherein the status was received from the network element.~~

where the sender's subnet has no alias, the first subnet representative broadcasts or multicasts a notification message which includes the identifier and an address for the first subnet.

7. (Currently Amended) The method of claim 6 wherein the ~~selecting the network element comprises:~~

~~ordering a set of network addresses; and~~

~~selecting one of the set of network addresses, the one corresponding to the network element;~~ notification message is forwarded by a switch to one or more of the set of subnets other than the sender's.

8. (Previously Presented) The method of claim 6 wherein the alias domain is a multicast domain, the method further comprising selecting a representative for the alias domain and delegating a multicast job to the domain representative.

9. (Currently Amended) The method of claim ~~6-7~~ wherein ~~the selecting the network element comprises determining the network element to have the set of data to be transmitted for the transmission~~ the notification message is received by network elements in said one or more of the subnets other than the sender's, and the network elements store the identifier and the address that are included in the message.

10. (Currently Amended) The method of claim 6-9 further comprising:
~~determining the status of transmission for at least one target in the domain to be incomplete; and~~

~~selecting a second network element to complete transmitting to the at least one target, the second network element having the set of data locally.~~

the core server sending another discovery message to a second subnet representative of a second subnet, wherein the second subnet representative has the identifier stored locally and that was received via the notification message that came from the first subnet representative, the second subnet representative to transmit a response to the core server indicating that its subnet has an alias, namely the first subnet.

11. (Currently Amended) A method for automatically establishing a set of subnets as an alias domain comprising:

transmitting by a core server a discovery message to each of a number of representatives of subnets in a network, the discovery message includes a the same transmission job identifier;

receiving by the core server responses to the discovery messages from each of the number of representatives of the subnets wherein the response from each representative indicates whether or not the transmission job identifier is stored locally;

creating a number of alias domains in the network based on the responses to the discovery messages, wherein if a response from a sender indicates the identifier is stored locally then the sender's subnet is assigned to an alias domain indicated in the response, and if the response indicates the identifier is not stored locally, then the sender's subnet is assigned to an alias domain;

for each alias domain in the network, assigning one of the number of representatives of the subnets whose subnet is part of the alias domain as the domain representative.

12. (Original) The method of claim 11 wherein assigning one of the number of representatives of the subnets whose subnet is part of the alias domain as the domain representative comprises:

ordering a set of network addresses; and

selecting one of the set of network addresses, the one of the set of network addresses corresponding to the one of the number of representatives of the subnets.

13. (Original) The method of claim 11 wherein assigning one of the number of representatives of the subnets whose subnet is part of the alias domain as the domain representative comprises:

indicating a preference value for each of the number of representatives; and
determining the one of the number of subnet representatives to have the preference value most desired of the number of representatives.

14. (Original) The method of claim 11 wherein assigning one of the number of representatives of the subnets whose subnet is part of the alias domain as the domain representative includes determining one of the number of representatives of the subnets to have a set of data to be transmitted throughout the network.

Claims 15-20 (Canceled).

21. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a ~~set of processors~~server, cause said ~~set of processors~~server to perform operations comprising:

determining a set of subnets to receive a set of data, wherein the set of subnets have visibility of a multicast transmission;

dynamically establishing the set of subnets as an alias domain by sending to a representative in each of the subnets a message that includes ~~a~~the same multicast job identifier and receiving a response that indicates whether or not the identifier has been previously received by the representative;

selecting a representative for the domain; and

indicating to the selected representative to transmit the set of data.

22. (Original) The machine-readable medium of claim 21 wherein the selecting the representative comprises:

ordering a set of network addresses; and

selecting one of the set of network addresses, the one corresponding to the representative.

23. (Original) The machine-readable medium of claim 21 wherein the selecting the representative comprises:

indicating a preference value for at least one network element in each of the set of subnets; and

determining the representative to have the preference value most desired in the set of subnets.

24. (Original) The machine-readable medium of claim 21 wherein the selecting the representative comprises determining the representative to have the set of data to be transmitted.

25. (Original) The machine-readable medium of claim 21 that provides instructions, which when executed by the set of processors, cause said set of processors to perform operations further comprising maintaining a status of transmission of the set of data.

26. (Original) The machine-readable medium of claim 21 that provides instructions, which when executed by the set of processors, cause said set of processors to perform operations further comprising:

determining the status of transmission to be incomplete; and

selecting a second representative to complete transmission of the set of data.

27. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a machine, cause said machine to perform operations for establishing automatically a set of subnets as an alias domain, comprising:

receiving a first message from a server indicating a broadcast or multicast transmission job identifier;

determining if the machine is in a domain for the transmission job by checking a cache in the machine for the identifier;

if the machine is not in the domain for the transmission job, then transmitting a second message to the server indicating the machine's subnet and adding the identifier to the cache; and

if the machine is in the domain for the transmission job, then transmitting ~~the~~ a second message to the server indicating the domain.

28. (Original) The machine-readable medium of claim 27 that provides instructions, which when executed by the machine, cause said machine to perform operations further comprising:

- receiving an indication of a source of a set of data for the transmission job;
- accessing the set of data;
- receiving an indication of a set of targets for the set of data;
- notifying the targets of the transmission job;
- transmitting the set of data to the set of targets; and
- transmitting an indication of a status of the transmission job to a server.

29. (Original) The machine-readable medium of claim 27 that provides instructions, which when executed by the machine, cause said machine to perform operations further comprising:

- receiving a notification of the transmission job;
- determining if the machine is one of a set of targets for the transmission job;
- listening for a set of data of the transmission job; and
- notifying a network element when the set of data has been received, the network element transmitting the set of data.

30. (Original) The machine-readable medium of claim 27 that provides instructions, which when executed by the machine, cause said machine to perform operations further comprising:

- receiving a set of data of the transmission job;
- indicating to a transmitting network element to modify a rate the set of data is being transferred if the rate is too slow or too fast for the machine; and
- indicating to the transmitting network element to retransmit a subset of the set of data if the subset was missed.